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EXAMINER	
ARCHIE, NINA	
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SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/601,171	FISCHER ET AL.	
	Examiner	Art Unit	
	Nina A. Archie	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/3/06*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *61-95 and 100* is/are pending in the application.

4a) Of the above claim(s) *96-99* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *61-95 and 100* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/16/03 and 11/19/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

Drawings

The drawings in this application have been accepted. No further action by Applicant is required.

Oath/Declaration

The oath or declaration is not legible and thus Examiner is not able to identify to determine if the application claims foreign priority or benefit of any United States application.

Information Disclosure Statement

The information disclosure statement filed on 10/16/03 and 11/19/03 has been considered. Initialed copies are enclosed.

Election/Restrictions

Applicant's election with traverse of Group 1, claims 61-95, in the reply filed on 11/3/06 are acknowledged. The traversal is on the ground(s) that the claims in the instant application are related to the anti-LTA antibodies of the invention. It is the Applicant's position that the subject matter claimed in Groups I and II, although patentably distinct, is related and should appropriately be examined together. In addition, Applicants believe that a search of anti-LTA antibodies of the invention would encompass any references useful in inter alia the examination of polynucleotides or vectors encoding said antibodies or methods employing said antibodies. In view of the relatedness of the claimed subject matter, it is the Applicant's position that a search and examination of all of the claims of Groups I and II would be coextensive and therefore would not place an undue burden on the Examiner. This is not found persuasive because Group I and Group II are distinct. Group I is drawn to a monoclonal antibody

and Group II are drawn to a polynucleotide encoding an antibody, vector, and cell. In the instant case, Group I and Group II are structurally different products and can be produced by different methods. The nucleic acid of Group II is not required to produce a monoclonal antibody of Group I. A monoclonal antibody is a purified antibody that recognizes only one antigen. A polynucleotide is a condensation polymer formed by the linking of nucleotides. The restriction for Groups I and II have acquired a separate status in the art as a separate subject for inventive effect and required independent searches. Moreover, as to the question of burden of search, classification of subject matter is merely one indication of the burdensome nature of the search involved. The literature search, particularly relevant in this art, is not co-extensive and is much more important in evaluating the burden of search. Burden in examining materially different groups having materially different issues also exist.

Claims 96-99 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected Group II, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 11/3/2006.

Claim Objections

Claims 61, 69, 81-85, 87-91, and 95 are objected to because of the following informalities: While the use of acronyms is permissible, the first use of the acronym should be preceded by the full name (i.e. Lipoteichoic acid) followed by the acronym in parenthesis (i.e. LTA). Appropriate correction is required.

Claims 67 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 67 is drawn to a monoclonal antibody of claim 61, wherein the antibody is capable of binding to LTA of Gram positive bacteria fixed to a solid support does not further limit the structure of the monoclonal antibody in claim 61.

Claims 69-76 are objected to because of the misspelled word statically. Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

The specification refers to "Mab 96-110" (see pg. 29 and the specification in its entirety). Claim 77, and all the dependent claims 78-79, 81-85, 87 and 89-96; recite the limitation "Mab 110".

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 61, 77-79, 92-93 and 95 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7, 9-12,14-19 of U.S. Patent No. 6,610,293.

In the instant case, the claims are drawn to independent claims, a monoclonal antibody comprising having binding specificity to LTA of Gram positive bacteria by 75% or more over background, a monoclonal antibody, or fragment thereof, having binding specificity to LTA, wherein the antibody has at least 70% amino acid activity with the variable region of a heavy chain, light chain, or both heavy chain and light chain of Mab 110, a polyclonal antibody composition comprising at least one of the antibodies of claim 61, 69, 77, 88, and a pharmaceutical composition comprising an effective amount of an antibody of claim 61, 69, 77, or 88, wherein the antibody binds LTA and is in a pharmaceutical carrier suitable for use in humans.

Claims 1-7 of U.S. Patent No. 6,610,293 teach a monoclonal antibody (chimeric immunoglobulin chain) or fragment thereof, having binding specificity to LTA of Gram positive bacteria, wherein the antibody enhances opsonization of Gram positive bacteria by 75% or more over background. Furthermore, U.S. Patent No. 6, 610, 293 teach a monoclonal antibody (chimeric immunoglobulin chain) of claim 61, 69, 77, 88, wherein the antibody is IgG, IgA, or IgM, a monoclonal antibody fragment of claim 61, 69, 77, 88, wherein the fragment is an Fab, Fab', F(ab')2 or sFv.

Claims 9-12,14-19 of U.S. Patent No. 6,610,293 teach a monoclonal antibody (chimeric immunoglobulin), or fragment thereof, having binding specificity to LTA, wherein the antibody has at least 70% amino acid identity with the variable region of a heavy chain, light chain, or both a heavy chain and light chain of Mab 110 of SEQ ID No. 86, Seq ID No. 87, Seq ID No. 88, Seq ID No. 89. Furthermore, U.S. Patent No. 6, 610,293 teach a monoclonal antibody of claim 77, wherein the amino acid identity is at least 80%, 90%, or 95% of SEQ ID No. 86, Seq ID No. 87, Seq ID No. 88, Seq ID No. 89, wherein the antibody comprises a portion of a human antibody sequence, and a pharmaceutical composition comprising an effective amount of an antibody of claim 61, 67, 77, or 88, wherein the antibody binds LTA and is in a pharmaceutical carrier suitable for use in humans.

Although the conflicting claims are not identical, they are not patentably distinct. The U.S. Patent No. 6,610293 recites the "chimeric immunoglobulin". The species of the chimeric immunoglobulin anticipate the genus claims of any monoclonal antibody.

Thus, claims 61, 77-79, 92-93 and 95 encompassing the monoclonal antibody in the present application are obvious over claims 1-7, 9-12,14-19 of U.S. Patent No. 6,610293 August 26, 2003.

Claims 61-93, 95 and 100 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 53-76, 79-83, and 89 of copending Application No. 11/193,440.

In the instant case, the claims are drawn to independent claims, a monoclonal antibody comprising having binding specificity to LTA of Gram positive bacteria by 75% or more over background, a monoclonal antibody comprising having binding specificity to LTA of Gram positive bacteria and confers a statistically enhancement of survival or reduced a bacteremia in a lethal animal model, a monoclonal antibody, or fragment thereof, having binding specificity to LTA, wherein the antibody has at least 70% amino acid activity with the variable region of a heavy chain, light chain, or both heavy chain and light chain of Mab 110, a monoclonal antibody comprising having binding specificity to LTA of Gram positive bacteria, wherein the antibody specifically binds to LTA of the Gram positive bacteria *Staphylococcus epidermidis* and *Staphylococcus aureus*, a pharmaceutical composition comprising an effective amount of an antibody of claim 61, 69, 77, or 88, wherein the antibody binds LTA and is in a pharmaceutical carrier suitable for use in humans, and an antibody, or fragment thereof, produced by the cell of claim 99.

U.S. Application No. 11/193,440 claims (53-60 and 76) a monoclonal antibody (humanized antibody) or fragment thereof, having binding specificity to LTA of Gram positive bacteria, wherein the antibody enhances opsonization of Gram positive bacteria by 75% or more over background, wherein the opsonization is in the presence of complement, cells, cell line, or combination thereof, wherein the complement, cells, or combination thereof is human, wherein the cells are phagocytic cells, wherein the cells are macrophages, monocytes, neutrophils, or combinations thereof, wherein the opsonization comprises opsonophagocytic bactericidal activity, wherein the antibody is

capable of binding to LTA of Gram positive bacteria fixed to a solid support, wherein the solid support is a plate well, bead, or a micro-bead, wherein the antibody specifically binds LTA exposed on the surface of the cell wall of Gram positive bacteria, wherein the antibody specifically binds to LTA of Gram positive bacteria that are coagulase positive, coagulase negative, or both coagulase positive and coagulase negative Gram positive bacteria, wherein the antibody specifically binds to LTA of Gram positive bacteria that are Staphylococcus epidermidis, wherein the antibody specifically binds to LTA of Gram positive bacteria that are *Staphylococcus epidermidis*, *Staphylococcus aureus*, or both *Staphylococcus epidermidis* and *Staphylococcus aureus*, wherein the antibody specifically binds to LTA of Gram positive bacteria that are multiple serotypes of *Staphylococcus epidermidis*, *Staphylococcus aureus*, or both *Staphylococcus epidermidis* and *Staphylococcus aureus*, wherein the multiple serotypes of *Staphylococcus aureus* are serotype 5, serotype 8, or both serotype 5 and serotype 8, wherein the antibody specifically binds to LTA of Gram positive bacteria that are Staphylococcus epidermidis and one or more Gram positive bacteria selected from the group consisting of *Staphylococcus aureus*, Streptococcus *mutans*, *Streptococcus faecalis*, and *Streptococcus pyogenes*.

Claims 61-68 and 82 of U.S. Application No. 11/193,440 claim a monoclonal antibody (humanized antibody) or fragment thereof having binding specificity to LTA of Gram positive bacteria and confers a statistically significant enhancement of survival or reduced bacteremia in a lethal animal model, wherein the statically significant enhancement of survival in a lethal animal model is 25% or greater, wherein the statically significant enhancement of survival in a lethal animal model is 50% or greater, wherein the statically significant enhancement of survival in a lethal animal model is 70% or greater, wherein the statically significant enhancement of survival in a lethal animal model is 76% or greater, wherein the statically significant enhancement of survival in a lethal animal model is 90% or greater, wherein the statically significant enhancement of survival in a lethal animal model is between 67% and 83%, wherein the statically significant enhancement of survival in a lethal animal model is between 83% and 100%.

Claims 69-75 and 79-81 of U.S. Application No. 11/193,440 claim a monoclonal antibody (humanized antibody) or fragment thereof having binding specificity to LTA, having binding specificity to LTA, wherein the antibody has at least 70% amino acid identity with the variable region of a heavy chain, light chain, or both a heavy chain and light chain of Mab 110, wherein the amino acid identity is at least 80%, 90%, or 95%, wherein the antibody comprises a portion of a human antibody sequence, wherein the portion of human antibody sequence comprises an Fc region, wherein the antibody is IgG, IgA, or IgM, wherein the fragment is an Fab, Fab', F(ab')2, or sFv.

Claim 83 of U.S. Application No. 11/193,440 teach a pharmaceutical composition comprising an effective amount of an antibody of wherein the antibody binds LTA and is in a pharmaceutical carrier suitable for use in humans of claim 95 in the instant application.

Claim 89 of U.S. Application No. 11/193,440 teach antibody, or fragment thereof, produced by the cell of claim 99 in the instant application.

Although the conflicting claims are not identical, they are not patentably distinct. The U.S. Application No. 11/193,440 recites a "humanized antibody". The species of the humanized antibody anticipate the genus claims of any monoclonal antibody.

Thus, claims 61-93, 95 and 100 encompassing the monoclonal antibody in the present application are obvious over claims 53-76 and 79-83 and 89 of U.S. Application No. 11/193,440 because antibodies are conveniently made from a monoclonal antibody.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 77-88, 92-93 and 95 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7, 9-14, 17-19 of copending Application No. 10/323,927.

In the instant case, the claims are drawn to independent claims, a monoclonal antibody, or fragment thereof, having binding specificity to LTA, wherein the antibody has at least 70% amino acid identity with the variable region of a heavy chain, light chain, or both a heavy chain and light chain of Mab 110 and a pharmaceutical

composition comprising an effective amount of an antibody of claim 61, 69, 77, or 88, wherein the antibody binds LTA and is in a pharmaceutical carrier suitable for use in humans.

Claims 1-5, 9-14, 17-19 of U.S. Application No. 10/323,927 teach a monoclonal antibody, or fragment thereof, having binding specificity to LTA, wherein the antibody has at least 70% amino acid identity with the variable region of a heavy chain, light chain, or both a heavy chain and light chain of Mab 110, wherein the amino acid identity is at least 80%, 90%, or 95%, wherein the antibody comprises a portion of a human antibody sequence, wherein the portion of human antibody sequence comprises an Fc region, wherein the antibody specifically binds LTA exposed on the surface of the cell wall of Gram positive bacteria, wherein the antibody specifically binds to LTA of Gram positive bacteria that are coagulase positive, coagulase negative, or both coagulase positive and coagulase negative Gram positive bacteria, wherein the antibody specifically binds to LTA of Gram positive bacteria that are *Staphylococcus epidermidis*, wherein the antibody specifically binds to LTA of Gram positive bacteria that are *Staphylococcus epidermidis*, *Staphylococcus aureus*, or both *Staphylococcus epidermidis* and *Staphylococcus aureus*, wherein the antibody specifically binds to LTA of Gram positive bacteria that are multiple serotypes of *Staphylococcus epidermidis, Staphylococcus aureus*, or both *Staphylococcus epidermidis* and *Staphylococcus aureus*, wherein the multiple serotypes of *Staphylococcus aureus* are serotype 5, serotype 8, or both serotype 5 and serotype 8, wherein the antibody specifically binds to LTA of Gram positive bacteria that are *Staphylococcus epidermidis* and one or more Gram positive bacteria selected from the group consisting of *Staphylococcus aureus*, *Streptococcus mutans, Streptococcus faecalis,* and *Streptococcus pyogenes.*

Claims 6-7 of U.S. Application No. 10/323,927 teach a pharmaceutical composition comprising an effective amount of an antibody of claim 61, 69, 77, or 88, wherein the antibody binds LTA and is in a pharmaceutical carrier suitable for use in humans.

Although the conflicting claims are not identical, they are not patentably distinct. The U.S. Application No. 10/323,927 recites the "monoclonal antibody". The species of the monoclonal antibody anticipate the genus claims of any monoclonal antibody.

Thus, claims 77-88, 92-93 and 95 encompassing the monoclonal antibody in the present application are obvious over claims 1-7, 9-14, 17-19 of U.S. Application No. 10,323,927.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 77-88, 93 and 100 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 40-43 and 47-68 and 72 of copending Application No. 10/323,926.

In the instant case, the claims are drawn to independent claims, a monoclonal antibody, or fragment thereof, having binding specificity to LTA, wherein the antibody has at least 70% amino acid activity with the variable region of a heavy chain, light chain, or both heavy chain and light chain of Mab 110, a monoclonal antibody comprising having binding specificity to LTA of Gram positive bacteria, wherein the antibody specifically binds to LTA of the Gram positive bacteria *Staphylococcus epidermidis* and *Staphylococcus aureus*, and an antibody, or fragment thereof, produced by the cell of claim 99.

Claims 40-43 and 47-68 of U.S. Application No. 10/323,926 teach a monoclonal antibody, or fragment thereof, having binding specificity to LTA, wherein the antibody has at least 70% amino acid identity with the variable region of a heavy chain, light chain, or both a heavy chain and light chain of Mab 110, wherein the amino acid identity is at least 80%, 90%, or 95%, wherein the antibody comprises a portion of a human antibody sequence, wherein the portion of human antibody sequence comprises an Fc region, wherein the antibody specifically binds LTA exposed on the surface of the cell wall of Gram positive bacteria, wherein the antibody specifically binds to LTA of Gram positive bacteria that are coagulase positive, coagulase negative, or both coagulase positive and coagulase negative Gram positive bacteria, wherein the antibody

specifically binds to LTA of Gram positive bacteria that are *Staphylococcus epidermidis*, wherein the antibody specifically binds to LTA of Gram positive bacteria that are *Staphylococcus epidermidis*, *Staphylococcus aureus*, or both *Staphylococcus epidermidis* and *Staphylococcus aureus*, wherein the antibody specifically binds to LTA of Gram positive bacteria that are multiple serotypes of *Staphylococcus epidermidis, Staphylococcus aureus*, or both *Staphylococcus epidermidis* and *Staphylococcus aureus*, wherein the multiple serotypes of *Staphylococcus aureus* are serotype 5, serotype 8, or both serotype 5 and serotype 8, wherein the antibody specifically binds to LTA of Gram positive bacteria that are *Staphylococcus epidermidis* and one or more Gram positive bacteria selected from the group consisting of *Staphylococcus aureus*, *Streptococcus mutans, Streptococcus faecalis,* and *Streptococcus pyogenes*.

Claim 72 of U.S. Application No. 10/323,926 teach an antibody, or fragment thereof, produced by the cell of claim 99.

Although the conflicting claims are not identical, they are not patentably distinct. The U.S. Application No. 10/323,926 recites the "monoclonal antibody". The species of the monoclonal antibody anticipate the genus claims of any monoclonal antibody.

Thus, claims 77-88, 93 and 100 encompassing the monoclonal antibody in the present application are obvious over claims 40-43 and 47-68 and 72 of U.S. Application No. 10/323,926.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112: The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 77-79, 81-85, 87 and 89-96 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

The claim recites monoclonal antibody 110 ("Mab 110"). This laboratory nomenclature is not provided for in the specification as originally filed. There is no Mab110 provided from in the written description of the specification. Therefore, it is apparent, that Applicants were not in possession of the claimed monoclonal antibody at the time of filing and could not have been in possession of 70% variants thereof at the time of filing. The description of hybridoma and MAb "96-110" does not support an abbreviated nomenclature, where laboratory designations are used to delineate unique fusions and products therefrom. Applicants pointing to the specification by page and line number where specific written description for the monoclonal antibody Mab110 and sequence thereof can be found best resolve this issue.

Claims 77-79, 81-85, 87 and 89-96 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 77, and all the dependent claims 78-79, 81-85, 87 and 89-96; the independent claim recites the phrase, "Mab110". However, the specification refers to Mab 96-110 (see specification in its entirety and Figure 12). Therefore, it is unclear how to interpret which monoclonal antibody the Applicant is referring to and how to ascertain

percent identity to a structure that is not particularly described in the specification as originally filed and not properly defined in the claims. Limitations of structure and sequence are not read into the claims.

As to claim independent claims 61, 69, 88, and 100 and all dependent claims 62-68, 70-76, and 89-95, 100; the independent claims, recites the phrase "fragment thereof". It is unclear what Applicant means by the phrase "fragment thereof" since antibody fragments do not opsonize. Correction or clarification is requested.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 94 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claimed invention is drawn to a product of nature. Products of nature are not patentable because they do not reflect the "hand of man" in the production of the product or manufacturing process. Diamond v. Chakrabarty, 206 USPQ 193 (1980). Additionally, purity of naturally occurring product does not necessarily impart patentability. Ex parte Siddiqui 156 USPQ 426 (1966). However when purity results in new utility, patentability is considered. Merck co. V. Chase Chemical Co. 273 F. Supp 68 (1967). See also American Wood v. Fiber Disintegrating Co., 90 US 566 (1974);American Fruit Growers v. Brogdex Co. 283 US 1 (1931); Funk Brothers Seed Co. V. Kalo Innoculant Co. 33 US 127 (1948). In the instant case recitation of a polyclonal antibodies does not indicate the hand of man because polyclonal antibodies are naturally occurring, therefore the claimed polyclonal antibody composition is deemed a product of nature.

Claim Rejections - 35 USC § 102 and 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 61-62 and 64-68, 81-82, 84-86, 89-90, 92-93, 100 are rejected under 35 U.S.C. 102(b) as being anticipated by Aasjford et al 1985, Acta path. Microbial. Immunol. Scand. Sect. C., 93: pgs. 245-250 in light of Roitt et al, 1993, Immunology, 3rd Edition, Mosby, St.

Claims 61-62, 81-82, 84-86, 89-90, 92-93 are drawn to a monoclonal antibody, or fragment thereof, having binding specificity to LTA of Gram positive bacteria, wherein the antibody enhances opsonization of Gram positive bacteria by 75% or more over background.

Aasjford et al teach two anti-lipotiechoic acid (LTA) monoclonal antibodies C7 and C6 (see page 247, column 1, first paragraph under "RESULTS") where the LTA

was from *Staphylococcus aureus*. Aasjford et al teach that both C6 and C7 were isotyped as being IgMkappa and did not react with other antigens tested. The antibodies were directed against the glycerol-phosphate backbone of LTA (see paragraph bridging pages 248-249). The monoclonal antibodies of Aasjford et al inherently opsonize gram positive bacteria by 75% over background because (1) the background is not defined and encompasses the absence of antibody and Roitt et al teach antibodies inherently have the ability to opsonize bacteria by virtue of their binding (see pg. 1.7, column, Figure 1.12) to a large extent as compare to the absence of any opsonin. Therefore, the property of "enhancing opsonization of gram positive bacteria by 75% or more over background" is inherent to the ability of antibodies to opsonize and any gram positive bacteria-binding antibody would necessarily opsonize 100% as compared to background, the absence of antibody. Aasjford et al further teach the monoclonal antibody is capable of binding to LTA of Gram positive bacteria fixed to a solid support such as a plate well (see pg. 246 column 2 paragraph 2).

As to dependent claim 81, the monoclonal antibodies of Aasjford et al inherently binds to LTA of exposed on the surface of the cell wall of Gram positive bacteria because glycerol-phosphate is found on the surface of the cell wall of Gram positive bacteria and antibodies bind to glycerol-phosphate.

As to dependent claims, the monoclonal antibodies of Aasjford et al inherently binds to LTA of Gram positive bacteria that are multiple serotypes of *Staphylococcus epidermidis, Staphylococcus aureus*, or both *Staphylococcus epidermidis* and *Staphylococcus aureus* (claim 85) and the multiple serotypes of *Staphylococcus aureus* are serotype 5, serotype 8, or both serotype 5 and serotype 8 (claim 86) because serotypes are not defined by a particular LTA structure but are defined by capsules.

As to dependent claims, the monoclonal antibodies of Aasjford et al inherently bind to LTA of Gram positive bacteria at a binding affinity of at least about 10E-7M or more (claim 89) and binding affinity of at least about 10E-8M or more (claim 90) because affinity is inherent to antibodies and antibodies would have this property in the absence of evidenced to the contrary.

Claims 69-76, 91; 95 are rejected under 35 U.S.C. 102(b) as being anticipated by Takada et al 1995, *Infection and Immunity* 63:57-65.

Claims 69-76, 91, 95 are drawn to the monoclonal antibody, or fragment thereof, having binding specificity to LTA of Gram positive bacteria and confers a statistically significant enhancement of survival or reduced bateremia in a lethal animal model. Furthermore, the claims 69-76, 91, 95 are drawn to a pharmaceutical composition comprising an effective amount of an antibody of claim 61, 69, 77, or 88, wherein the antibody binds LTA and is in a pharmaceutical carrier suitable for humans.

Takada et al teaches antigenic reactivity of the LTA extracts from *Enterococcus hirae* with monoclonal antibodies raised against *Streptococcus pyogenes.* Takada et al further teach administration of a mixture of saline which is a pharmaceutical carrier, LTA-2, and monoclonal antibody TS-2 injected into MDP-primed C3H/HeN mice (see pg. 60 column 1 paragraph 4). Takada et al teach that four of the six mice showed complete regression of the established tumors after injections of LTA-2 fraction and ten of fourteen mice in the LTA-2 fraction group showed complete curing of the tumors (see pg. 61 column 2 paragraph 2 and Figure 4 and pg. 62 column 1 and Figure 5). In regarding the limitation of the statistically significant enhancement of survival in a lethal animal model Takada et al teach the claim limitations of significant enhancement of survival in a lethal animal of 25%, 50%, 70%, 76%, 90% and the claim limitations of survival in a lethal animal between 67% and 83% and 83% and 100%. Takada et al further teaches that the strong reactivity of monoclonal antibody TS-2 with the LTA-2 fraction is capable of neutralizing the cytokine inducing activities of the LTA-2 fraction (see pg. 63 column1 paragraph 2 and Table 6 and column 2 paragraph 1).

Claim 94 is rejected under 35 U.S.C. 102(b) as being anticipated by Chugh et al 1990, Infection and Immunity Vol. 58 No. 2 pgs. 315-319.

Claim 94 is drawn to a polyclonal antibody composition.

Chugh et al teach polyclonal anti-LTA antibodies produced from *Staphylococcus epidermidis* that are coagulase negative, *Staphylococcus aureus* that are coagulase positive, and *Streptococcus pyogenes* (see pg. 315 column 2 last 2 sentences, column

1 paragraphs 1-2 and pg. 317 column 1 paragraphs 3). The polyclonal antibodies of Chugh et al inherently opsonize gram positive bacteria by 75% over background because (1) the background is not defined and encompasses the absence of antibody and Roitt et al teach antibodies inherently have the ability to opsonize bacteria by virtue of their binding (see pg. 1.7, column, Figure 1.12) to a large extent as compare to the absence of any opsonin. Therefore, the property of "enhancing opsonization of gram positive bacteria by 75% or more over background" is inherent to the ability of antibodies to opsonize and any gram positive bacteria-binding antibody would necessarily opsonize 100% as compared to background, the absence of antibody.

Claim 94 is rejected under 35 U.S.C. 102(b) as being anticipated by West et al West et al 1983, Infection and Immunity Vol. 42 No. 3 pgs. 1020-1026.

Claim 94 is drawn to a polyclonal antibody composition.

West et al teach a polyclonal antibody composition comprising anti-teichoic acid antibodies produced from *Staphylococcus epidermidis* strain 1254 and Staphylococcus aureus strain Lafferty in rabbits isotyped as being IgG antibodies (see pg. 1020 column 2, 1021 column 1 paragraphs 1-2). West et al teach that teichoic acids antigens were prepared by removing the whole bacteria thus obtaining the crude extract, which has the cell membrane, which encompasses Lipoteichoic acids (see pg. 1021 column 1 paragraph 3). West et al further teach cross reactivity between the teichoic acids from *Staphylococcus epidermidis* strain 1254 and *Staphylococcus aureus* strain Lafferty (see pg. 1025 column last paragraph and column 2 paragraphs 1-2).

Claims 61-62 and 64-67, 81-90, 92-93, 100 are rejected under 35 U.S.C. 102(b) as being anticipated by Hamada et al 1984, Microbiol. Immunol. Vol. 28 No. 9 pgs. 1009-1021 in light of Roitt et al, 1993, Immunology, 3rd Edition, Mosby, St.

The instant claims are drawn to the monoclonal antibody, wherein the antibody specifically binds to LTA of Gram positive bacteria that are Staphylococcus epidermidis (claim 83); the monoclonal antibody, wherein the antibody specifically binds to LTA of Gram positive bacteria that are Staphylococcus epidermidis and one or more Gram

positive bacteria selected from the group consisting of *Staphylococcus aureus*, *Streptococcus mutans*, *Streptococcus faecalis*, and *Streptococcus pyogenes* (claim 87); A monoclonal antibody, or fragment thereof, having binding specificity to LTA of Gram positive bacteria, wherein the antibody specifically binds to LTA of the Gram positive bacteria *Staphylococcus epidermidis* and *Staphylococcus aureus* (claim 88).

Hamada et al teaches a monoclonal antibody 3G6mAb isotyped as being IgG that reacts with the glycerophosphate (PGP), the backbone of Lipoteichoic acid of *Staphylococcus aureus and Staphylococcus epidermidis* (see pg. 1017 second paragraph and pg. 1018 Table 3). Hamada et al teach that LTAs are a group of polymers composed of glycerophosphate (PGP) (see pg. 1009 first paragraph). Hamada et al further teach that 3G6mAb is also specific for PGP of *Streptococcus mutans*, *Streptococcus faecalis*, and *Streptococcus pyogenes*. The monoclonal antibodies of Hamada et al inherently opsonize gram positive bacteria by 75% over background because (1) the background is not defined and encompasses the absence of antibody and Roitt et al teach antibodies inherently have the ability to opsonize bacteria by virtue of their binding (see pg. 1.7, column, Figure 1.12) to a large extent as compare to the absence of any opsonin. Therefore, the property of "enhancing opsonization of gram positive bacteria by 75% or more over background" is inherent to the ability of antibodies to opsonize and any gram positive bacteria-binding antibody would necessarily opsonize 100% as compared to background, the absence of antibody.

As to dependent claim 81, the monoclonal antibodies of Hamada et al inherently binds to LTA of exposed on the surface of the cell wall of Gram positive bacteria because glycerol-phosphate is found on the surface of the cell wall of Gram positive bacteria and antibodies bind to glycerol-phosphate.

As to dependent claims, the monoclonal antibodies of Hamada et al inherently binds to LTA of Gram positive bacteria that are multiple serotypes of *Staphylococcus epidermidis, Staphylococcus aureus*, or both *Staphylococcus epidermidis* and *Staphylococcus aureus* (claim 85) and the multiple serotypes of *Staphylococcus aureus*

are serotype 5, serotype 8, or both serotype 5 and serotype 8 (claim 86) because serotypes are not defined by a particular LTA structure but are defined by capsules.

As to dependent claims, the monoclonal antibodies of Hamada et al inherently bind to LTA of Gram positive bacteria at a binding affinity of at least about 10E-7M or more (claim 89) and binding affinity of at least about 10E-8M or more (claim 90) because affinity is inherent to antibodies and antibodies would have this property in the absence of evidenced to the contrary.

Claim 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aasjford et al 1985, Acta path. Microbial. Immunol. Scand. Sect. C., 93: pgs. 245-250 in view of Hamada et al 1984, Microbiol. Immunol. Vol. 28 No. 9 pgs. 1009-1021 and in view of Schwarzberg US Patent November 25, 1980.

Aasjford et al is relied upon as set forth supra. However, Aasjford et al does not teach monoclonal antibody fragment of a monoclonal antibody having binding specificity to LTA of Gram positive bacteria that are Staphylococcus epidermidis and of *Staphylococcus aureus*.

Hamada et al teach a monoclonal antibody 3G6mAb isotyped as being IgG that reacts with the glycerophosphate (PGP), the backbone of Lipoteichoic acid of *Staphylococcus aureus and Staphylococcus epidermidis* (see pg. 1017 second paragraph and pg. 1018 Table 3). Hamada et al teach that LTAs are a group of polymers composed of glycerophosphate (PGP) (see pg. 1009 first paragraph). Hamada et al further teach that 3G6mAb is also specific for PGP of *Streptococcus mutans*, *Streptococcus faecalis*, and *Streptococcus pyogenes.*

Schwarzberg teaches a protein binding assays by preparing a ligand-label complex which has three components: (1) ligand (microorganisms), (2) monovalent receptor (Fab), and (3) label (see column 3 lines 42-69 and column 4-6). Schwarzberg teaches Fab fragments of antibodies that retain a high degree of specificity and binding constant of the intact antibody (see column 3 lines 5-25, column 9 lines 63-69, and column 10 lines 1-10).

It would have been prima facie obvious at the time the invention was made to produce a monoclonal antibody fragment taught by Aasjford et al and to produce a monoclonal antibody that can cross react between Gram positive organisms according to Hamada because Aasjford et al and Hamada et al teach a monoclonal antibody that can cross react between Gram positive bacteria and one would have been motivated produce a monoclonal antibody fragment because monoclonal antibody fragments retain a high degree of specificity and affinity taught by Schwarzberg.

Claim 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al 1995, *Infection and Immunity* 63:57-65 in view of Hamada et al 1984, Microbiol. Immunol. Vol. 28 No. 9 pgs. 1009-1021.

Takada et al is relied upon as set forth supra. However, Takada et al does not teach a pharmaceutical composition of comprising an effective amount of an antibody having binding specificity to LTA of Gram positive bacteria that are Staphylococcus epidermidis and of *Staphylococcus aureus*.

Hamada et al teach a monoclonal antibody 3G6mAb isotyped as being IgG that reacts with the glycerophosphate (PGP), the backbone of Lipoteichoic acid of *Staphylococcus aureus and Staphylococcus epidermidis* (see pg. 1017 second paragraph and pg. 1018 Table 3). Hamada et al teach that LTAs are a group of polymers composed of glycerophosphate (PGP) (see pg. 1009 first paragraph). Hamada et al further teach that 3G6mAb is also specific for PGP of *Streptococcus mutans*, *Streptococcus faecalis*, and *Streptococcus pyogenes*.

It would have been prima facie obvious at the time the invention was made to produce a monoclonal antibody that has cross reactivity with other Gram positive bacteria according to Hamada et al in the pharmaceutical composition taught by Takada et al, because Takada et al and Hamada et al teach a pharmaceutical composition comprising a monoclonal antibody that can cross react between Gram positive organisms.

Status of the Claims

No claims allowed.

Conclusion

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nina A. Archie whose telephone number is 571-272-9938. The examiner can normally be reached on Monday-Friday 8:30-5:00p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Jeffrey Siew can be reached on 571-272-0787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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